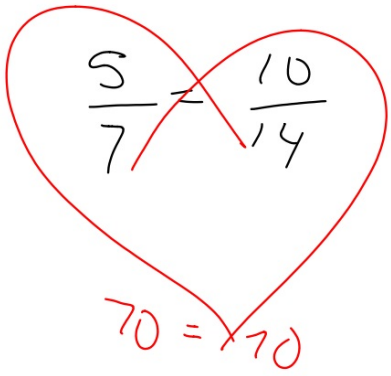
Alg 1 2.6

Compare ratios
Solve proportions

ratio
proportion
cross-products
scale
scale model

$\frac{5 \text{ girls}}{7 \text{ boys}}$



Solve each proportion. If necessary, round to the nearest hundredth.

15. $\frac{3}{8} = \frac{15}{a}$

$3a = 120$

$\frac{3a}{3} = \frac{120}{3}$

$a = 40$

16. $\frac{t}{2} = \frac{6}{12}$

$12t = 12$

$\frac{12t}{12} = \frac{12}{12}$

$t = 1$

17. $\frac{4}{9} = \frac{13}{q}$

$4q = 117$

$\frac{4q}{4} = \frac{117}{4}$

$q = 29.25$

ICE WS due end of class

27. $\frac{x-3}{5} = \frac{6}{10}$

$10(x-3) = 30$

$10x - 30 = 30$

$+30 \quad +30$

$\frac{10x}{10} = \frac{60}{10}$

$x = 6$

28. $\frac{7}{x+9} = \frac{21}{36}$

$21(x+9) = 7 \cdot 36$

$21x + 189 = 252$

$-189 \quad -189$

$\frac{21x}{21} = \frac{63}{21}$

$x = 3$

29. $\frac{10}{15} = \frac{4}{x-5}$

$10x - 50 = 60$

$+50 \quad +50$

$\frac{10x}{10} = \frac{110}{10}$

$x = 11$

32. CCSS **PRECISION** An artist used interlocking building blocks to build a scale model of Kennedy Space Center, Florida. In the model, 1 inch equals 1.67 feet of an actual space shuttle. The model is ~~110.3 inches~~ 7 ft tall. How tall is the actual space shuttle? Round to the nearest tenth. 184.2 ft

33. **MENU** On Monday, a restaurant made $545 from selling 110 hamburgers. If they sold 53 hamburgers on Tuesday, how much did they make?

$\frac{\$545}{110} = \frac{x}{53}$ (\$/h)

$\frac{110x}{110} = \frac{28,885}{110}$

$262.59

model $\frac{1 in}{1.67 ft} = \frac{110.3 in}{x}$ SS

$1 \cdot x = 1.67(110.3)$

$x = 184.201$

40. ATHLETES At Piedmont High School, 3 out of every 8 students are athletes. If there are 1280 students at the school, how many are not athletes?

41. BRACES Two out of five students in the ninth grade have braces. If there are 325 students in the ninth grade, how many have braces?

1280
-480

$\frac{3 \text{ ath}}{8 \text{ st}}$

$\frac{3}{8} = \frac{x}{1280}$

$8x = 3840$

480

$\frac{5 \text{ wears}}{8} = \frac{x}{1280}$

$8x = 6400$

$x = 800$

$\frac{\text{br } 2}{\text{st } 5} = \frac{x \text{ br}}{325 \text{ st}}$

$\frac{5x}{5} = \frac{650}{5}$

$x = 130$